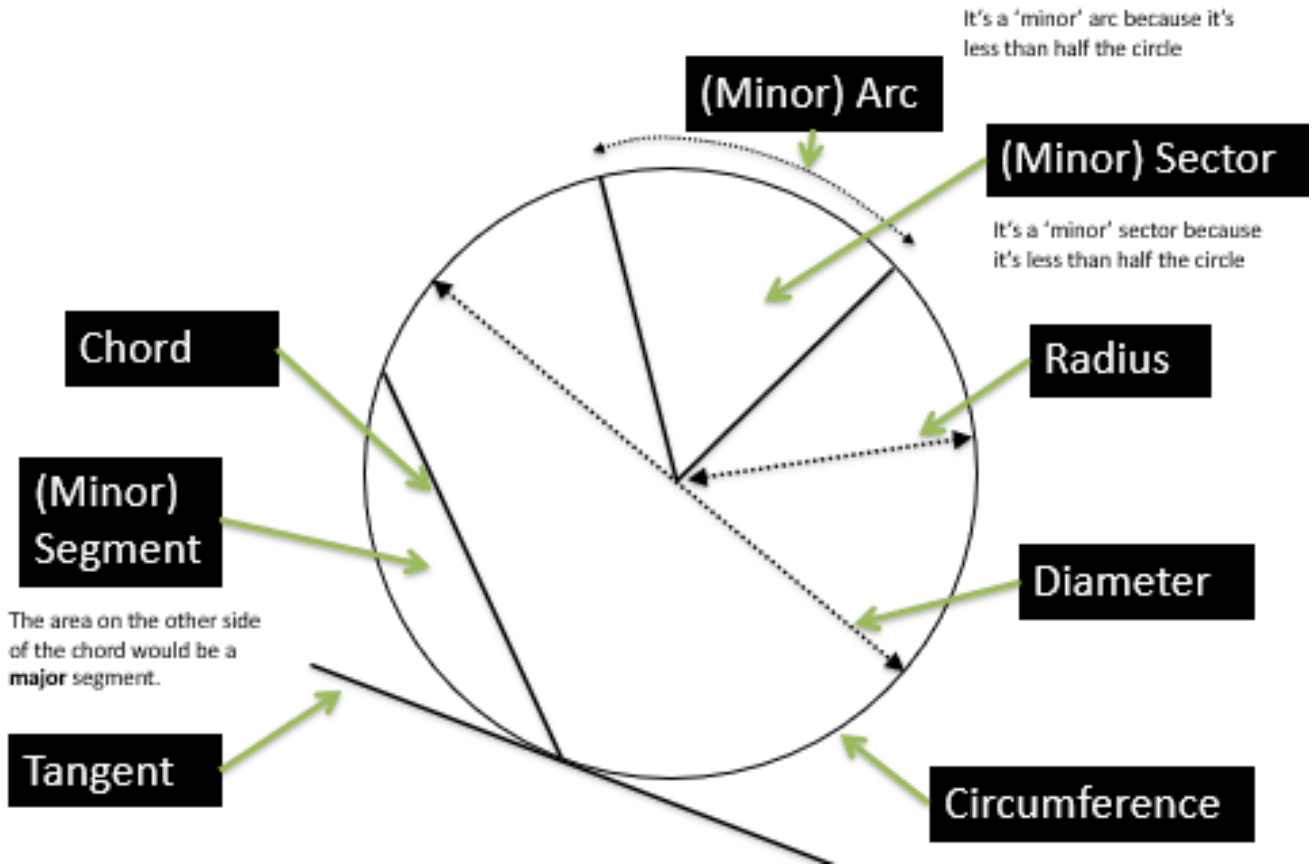
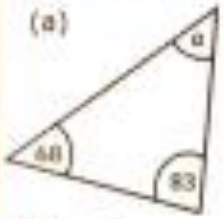
(3) Triangles in circles
Do now



Using a protractor measure the angles in the triangles

Find the missing angles.

(a)



(b)

(c)

(d)

(a) $a = 29°$

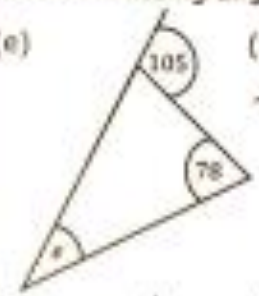
(b) $b = 40°$

(c) $c = 49°$

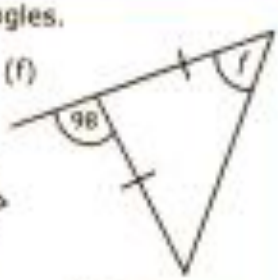
(d) $d = 45°$

Find the missing angles.

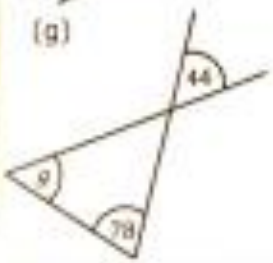
(e)



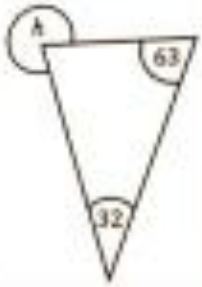
(f)



(g)



(h)



(e) $e = 27°$

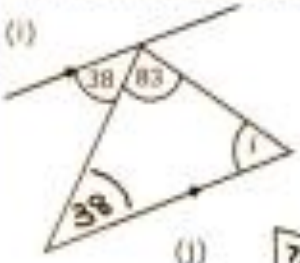
(f) $f = 49°$

(g) $g = 58°$

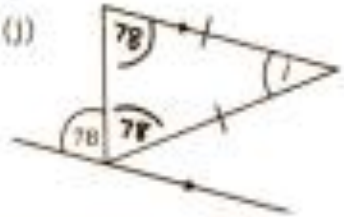
(h) $h = 275°$

Find the missing angles.

(i)



(j)

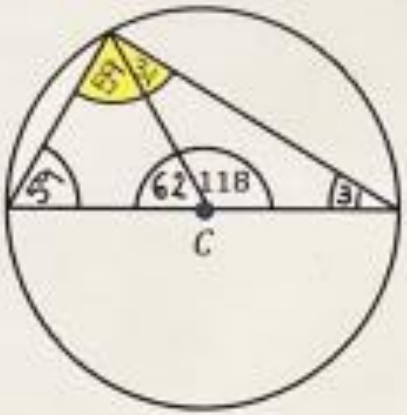


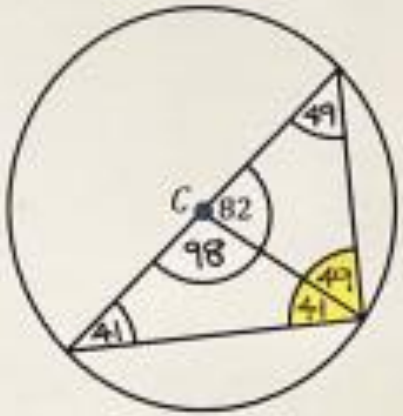
(i) $i = 59°$

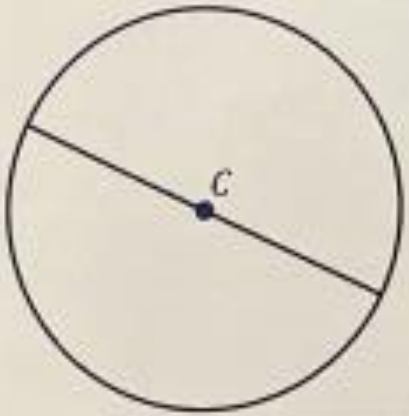
(j) $j = 24°$

Investigating Triangles Inside Circles

The first three diagrams show two joined isosceles triangles that fit together inside a semicircle. Calculate all marked angles and write down what you notice about the shaded angle. In the final diagram, choose your own angles and test your theory.



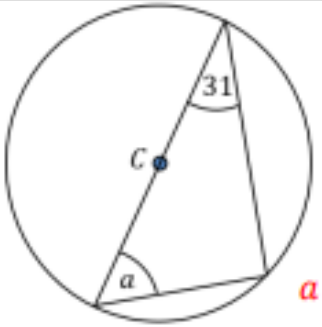




What did you notice? The shaded angle is always 90°

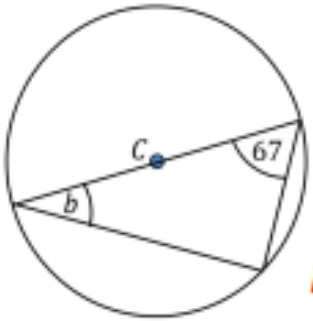
Right-Angle in a Semi-Circle Practice Grid

(a)



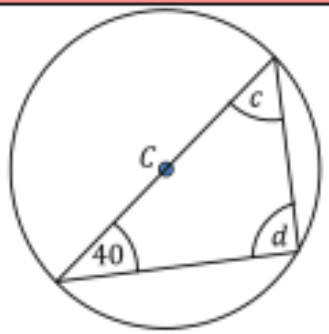
$a = 59°$

(b)



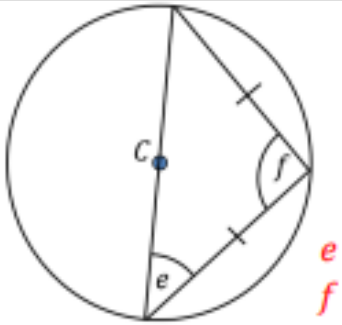
$b = 23°$

(c)



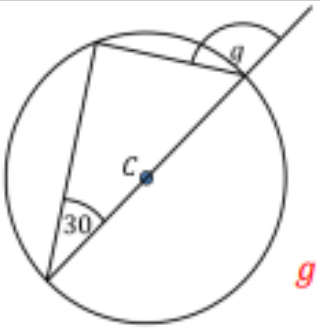
$c = 50°$
$d = 90°$

(d)



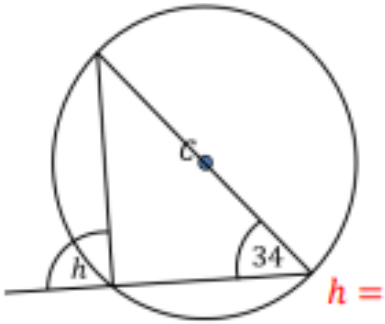
$e = 45°$
$f = 90°$

(e)



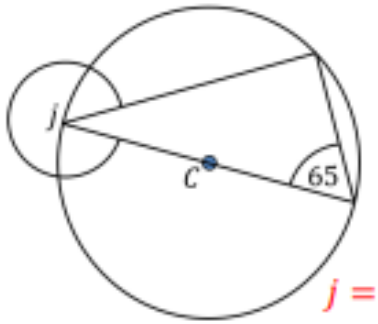
$g = 120°$

(f)



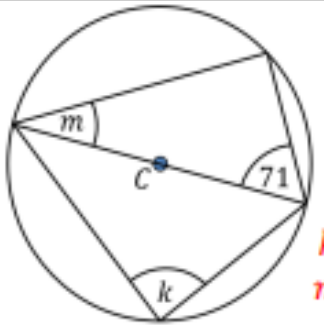
$h = 90°$

(g)



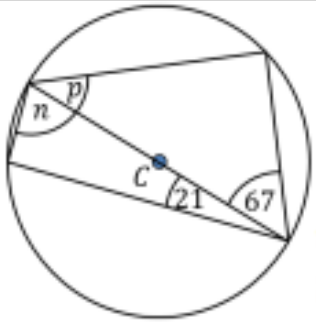
$j = 335°$

(h)



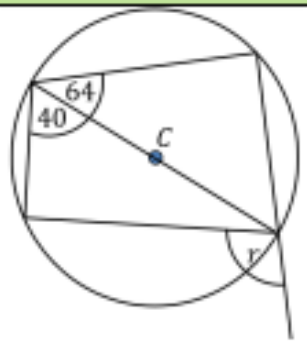
$k = 90°$
$m = 19°$

(i)



$n = 69°$
$p = 23°$

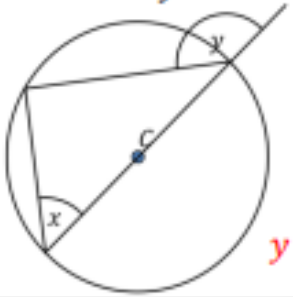
(j)



$r = 104°$

(k)

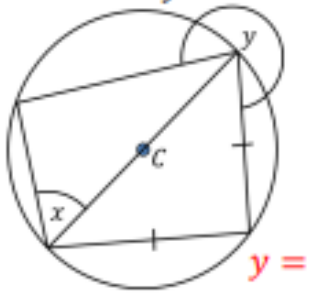
Find y in terms of x



$y = 90 + x$

(l)

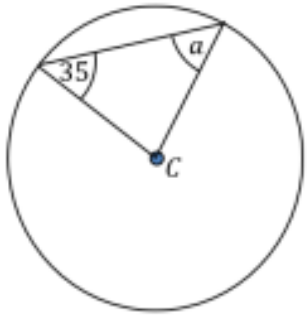
Find y in terms of x



$y = 225 + x$

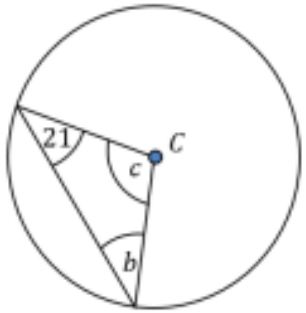
Isosceles Triangle in a Circle Practice Grid

(a)



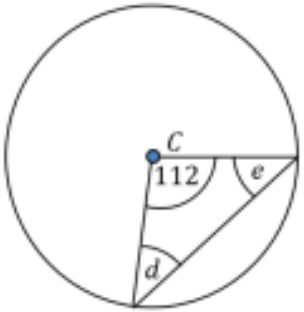
$a = 35°$

(b)



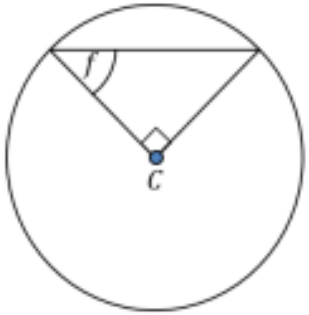
$b = 21°$
$c = 138°$

(c)



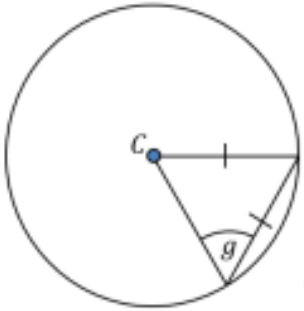
$d = 34°$
$e = 34°$

(d)



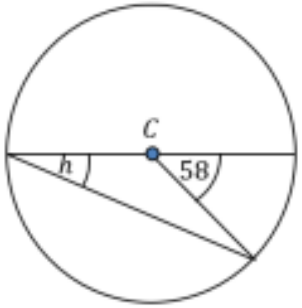
$f = 45°$

(e)



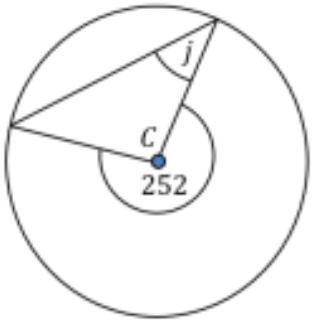
$g = 60°$

(f)



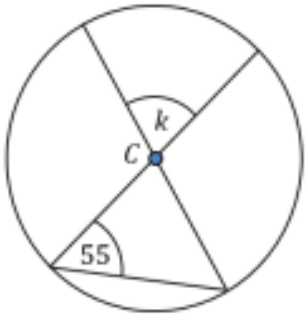
$h = 29°$

(g)



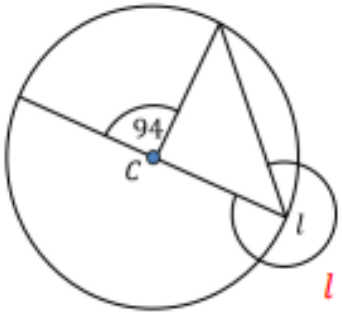
$j = 36°$

(h)



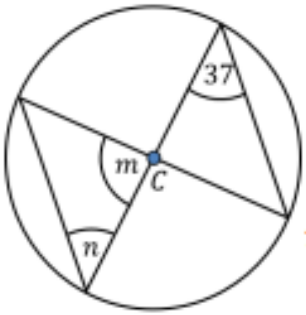
$k = 70°$

(i)



$l = 313°$

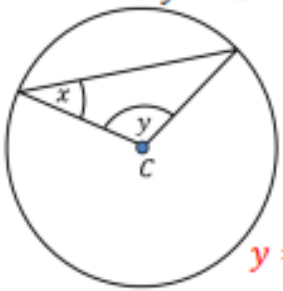
(j)



$m = 106°$
$n = 37°$

(k)

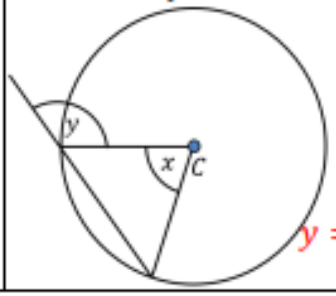
Find y in terms of x



$y = 180 - 2x$

(l)

Find y in terms of x



$y = 90 + \frac{x}{2}$